

1 Claims

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3 1. A method of determining the presence or
4 severity of ischaemia in a tissue, the method
5 comprising the steps of inserting a pH sensor
6 into the tissue, and measuring the
7 intracompartmental pH in the tissue.

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9 2. A method as claimed in claim 1, wherein the
10 tissue is muscle.

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12 3. A method as claimed in any preceding claim,
13 wherein a second probe is used to measure the
14 intracompartmental pressure in the tissue.

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16 4. A method as claimed in any preceding claim,
17 wherein the or each sensor is mounted on a
18 respective catheter.

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20 5. A method as claimed in any preceding claim,
21 wherein the or each catheter is inserted into
22 the muscle through a respective cannula.

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24 6. A method as claimed in any preceding claim,
25 wherein the or each cannula is inserted into
26 skeletal muscle in an orientation that is
27 generally parallel to the muscle fibres.

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29 7. A method as claimed in any preceding claim,
30 wherein the tissue is adjacent to a bone
31 fracture, and wherein the or each cannula is

1 inserted into the muscle adjacent to, but not
2 communicating with, the fracture site.

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4 8. A method as claimed in any preceding claim,
5 wherein the reading from the or each sensor is
6 compared with a calibrated scale to determine
7 the extent of tissue damage.

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9 9. A method as claimed in any preceding claim,
10 wherein the ischaemia involves Acute
11 Compartment Syndrome.

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13 10. A method as claimed in any preceding claim,
14 wherein the ischaemia involves a transplant or
15 tissue flap.

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17 11. A method as claimed in any preceding claim,
18 wherein the ischaemia involves septic shock,
19 neurogenic shock, cardiogenic shock or
20 hypovolaemic shock.

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22 12. A method as claimed in any preceding claim,
23 wherein the ischaemia involves vascular
24 surgery.

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26 13. Apparatus for determining the presence or
27 severity of ischaemia, the apparatus having a
28 pH sensor adapted to be inserted into a muscle.

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30 14. Apparatus as claimed in claim 13, wherein the
31 pH sensor is mounted on a catheter.

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- 1 15. Apparatus as claimed in claim 14, wherein the
2 catheter is glass-tipped.
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- 4 16. Apparatus as claimed in claim 14, wherein the
5 catheter is antimony-tipped.
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- 7 17. Apparatus as claimed in any one of claims 12-
8 16, wherein the apparatus also includes a
9 pressure sensor coupled to a pressure recording
10 device.
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- 12 18. Apparatus as claimed in claim 17, wherein the
13 pH sensor and the pressure sensor are mounted
14 on the same catheter.
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- 16 19. Apparatus as claimed in any one of claims 12-
17 18, wherein the pH sensor is connected to a pH
18 recorder.
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- 20 20. The use of a pH sensor device for the
21 determination of the presence or the severity
22 of ischaemia and typically Acute Compartment
23 Syndrome.
24
- 25 21. The use of a pH sensor device according to
26 claim 20, wherein the ischaemia involves Acute
27 Compartment Syndrome.
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- 29 22. A method of determining information concerning
30 the condition of soft tissue, the method
31 comprising the steps of inserting a pH sensor

1 into the soft tissue and measuring the pH in
2 the tissue.

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4 23. A method of measuring intracompartmental pH,
5 including the step of inserting a pH sensor
6 directly into a muscle.

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